

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

FUMA INTERNATIONAL LLC,
an Ohio limited liability company,

Plaintiff/Counterdefendant,
v.
R.J. REYNOLDS VAPOR
COMPANY,
a North Carolina corporation,

Defendant/Counterplaintiff.

Civil Action No. 1:19-cv-260
and
Civil Action No. 1:19-cv-660

ORAL ARGUMENT
REQUESTED

**REYNOLDS'S REPLY IN SUPPORT OF ITS
MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT**

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Exhibit No.	Production No.	Document Description
9	FUMA00000564-66	'917 Electronic Acknowledgment Receipt
10	N/A	Attachment A to RJRV's Fourth Supplemental Objections and Responses to Plaintiff's Second Set of Interrogatories (Nos. 6-13), identifying initial marketing date for VUSE Solo device
11	N/A	Excerpt from Gilley Deposition Transcript (June 26, 2020)
12	RJRV-F000322298 – 99, RJRV-F000322322 – 23, RJRV-F000322353 – 54, RJRV-F000322546 – 53, RJRV-F000535242 – 44, RJRV-F000584340	Exemplary Solo advertising materials from 2013
13	RJRV-F00054680 – 715	U.S. Patent No. 9,609,893

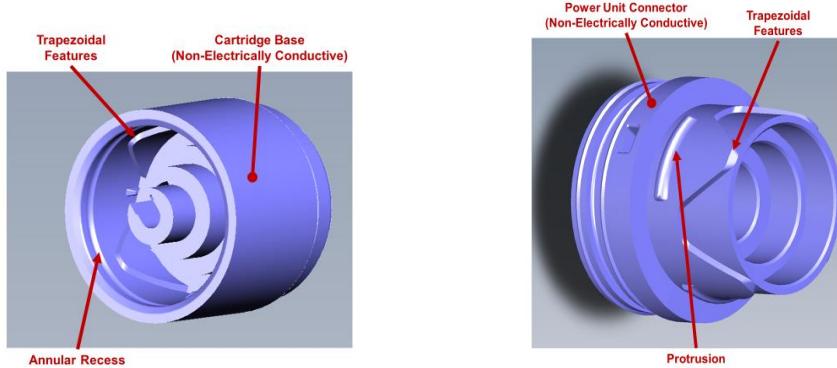
I. Introduction

Fuma’s Opposition fails to create genuine issues that would preclude summary judgment of non-infringement. Instead, Fuma mischaracterizes the accused devices, the claim language, the Claim Construction Order, Reynolds’s non-infringement positions, and the law. Fuma’s incorrect statements and attorney hyperbole provide no basis for denying Reynolds’s motion.

II. Solo Lacks the “Electrically Conductive Portion” Adapted to “Mechanically and Electrically Couple”

Fuma’s Opposition relies on the fallacy that the “electrically conductive portion” does not have to mechanically couple the cartridge to the power source. Notably, Fuma recognizes that the portions of the Solo cartridge housing that mechanically couple to the power source are **not** electrically conductive and are **not** part of electrically conductive structures. Instead, the structures for mechanical coupling are on **non-electrically conductive** portions, namely the cartridge base and power source connector (shown below). (Dkt.122-1,pp.19-33¹; *see also* Dkt.122-8, ¶¶35,51-53,123.)

¹ Citations to ECF page#.



(Dkt.122-8,¶36 (annotated).)

Given these undisputed facts, Fuma attempts to disassociate the modifier “electrically conductive” from the noun “portion” by arguing:

“there is **a portion** of the cartridge and a portion of the power source that mechanically and electrically couple together, literally meeting the Court’s claim construction.” (Dkt.130,p.10 (annotated).)

“**The portion** for mechanically and electrically coupling the cartridge to the power source can have separate mechanical and electrical coupling features, **and the mechanical coupling feature does not have to be electrically conductive.**” (Dkt.130,p.11 (annotated).)

Fuma’s argument ignores the plain claim language. The asserted claims do not broadly state “a portion” adapted to mechanically and electrically couple the

components. The claims require “an *electrically conductive [threaded] portion*” for mechanically and electrically coupling the components. Thus, (i) *the claimed portion* “*is electrically conductive*” and (ii) *that electrically conductive portion performs both functions*. Because the portion of the Solo’s cartridge housing that mechanically couples to the power source is undisputedly not electrically conductive, the Solo does not infringe.

To perpetuate its fallacy, Fuma misconstrues and expands the statement in the Court’s Claim Construction Order that the “threads” (of the ’604 patent claims) need not be electrically conductive. (Dkt.95,p.8.) While the threads themselves need not be electrically conductive, they *must be part of the electrically conductive portion*. The Court’s Order concluded that “electrically conductive” modifies “threaded portion.” (*Id.*) The Court also concluded that “the electrically conductive threaded portion” means “electrically conductive portion that is threaded.” (*Id.* at 6.) But the Court did not, nor was it asked to, conclude that a *non-electrically* conductive portion can provide the mechanical coupling, because the plain claim language requires that the “*electrically conductive portion*” is adapted to mechanically couple.

As detailed in Reynolds’s Opposition (Dkt.131,pp.34-35), *if* a device includes threads that are electrically conductive or are part of an electrically conductive portion, such as taught in the specification and FIG 2 (Dkt.76-2,6:24-

28,FIG. 2), then the device satisfies the claim language. If, however, the threads are not electrically conductive *or are not part of the electrically conductive portion*, then they do not satisfy the claim language that the “electrically conductive portion” be “adapted to mechanically and electrically couple” the components. Fuma cannot rewrite the Court’s Claim Construction Order to cover the Solo where the only features that provide the mechanical coupling (i.e. the annular recess and protrusions, and according to Fuma, the trapezoidal features) are indisputably part of a *non*-electrically conductive portion.

Fuma’s other argument, that Reynolds’s non-infringement position rests on the premise that a “single” feature or component must provide both the mechanical and electrical coupling, misstates Reynolds’s position. Reynolds acknowledged that separate components may provide the mechanical and electrical couplings.² (See, e.g., Dkt.131,p.31.) However, the claims require, and the specification teaches (Dkt.76-2,6:24-29,6:34-35,FIG.2), that the components that mechanically couple *must also be a part of the electrically conductive portion*, which they are

² Contrary to Fuma’s incorrect assertion, and while not material to Reynolds’s motion, the specification *does disclose* an embodiment where a single “feature” or component provides both a mechanical and electrical coupling – the conductive element 216 (which may be electrically conductive metallic threads). (Dkt.76-2,FIG.2,6:24-28;2:59-3:1.)

not in the Solo device.³ The structures that provide mechanical coupling in the Solo device are the annular recess and the protrusions (and according to Fuma the trapezoidal features). Fuma concedes, as it must, that these structures are not electrically conductive. And, unlike the threads in the patents-in-suit, which Fuma admits are on the conductive element 216 (Dkt.130,p.12), the Solo mechanical couplings are on the ***non-electrically conductive*** cartridge base and power source connector. Thus, as a matter of law, the Solo does not literally infringe.

Similarly, Fuma’s Opposition fails to raise a disputed issue of fact that preserves its DOE claim for trial. Fuma’s expert reports merely argue that the trapezoidal features on the non-electrically conductive portions of the Solo device are equivalent to threads. They do not present the required DOE analysis explaining why a ***non-electrically*** conductive portion for mechanically coupling the components ***and*** a separate electrically conductive portion for electrically coupling the components is an insubstantial difference or the substantial equivalent of an electrically conductive portion adapted to perform both functions. Instead,

³ Notably, the patents ***do not disclose any*** embodiment where the structure for mechanical coupling is located on a non-conductive portion of the device. Moreover, Fuma’s assertion that Reynolds’s position “***excludes***” a preferred embodiment is wrong. (Dkt.130,p.12.) The claims require an electrically conductive portion (e.g., conductive element 216) adapted to electrically and mechanically couple, and are ***open*** to (but do not require) other components (e.g., center post 218) of the electrical circuit.

the reports perpetuate Fuma’s erroneous claim construction, which dissociates the “electrically conductive” modifier from the term “portion.” Faced with this deficiency, Fuma argues that it should be “intuitive” that the accused structure is equivalent. Attorney argument does not create a disputed issue of fact. *Ferring B.V. v. Barr Labs., Inc.*, 437 F.3d 1181, 1193 (Fed. Cir. 2006). Moreover, even if Fuma had introduced some factually supported analysis, Fuma’s DOE argument, like its literal infringement argument, eviscerates the “electrically conductive” requirement from the claim, which is wrong as a matter of law. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016); *Planet Bingo, LLC. v. GameTech Intern., Inc.*, 472 F.3d 1338, 1344 (Fed. Cir. 2006).

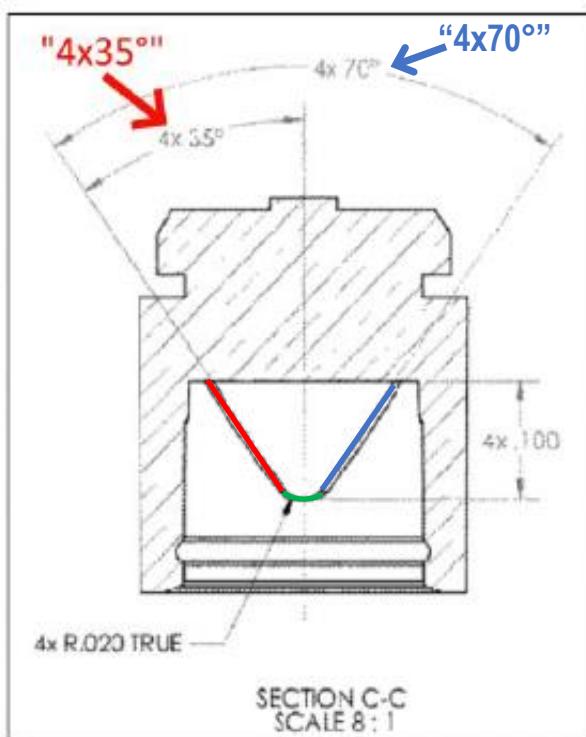
III. Solo Lacks “Electrically Conductive *Threaded* Portions”

The ’604 patent claims require an “electrically conductive threaded portion,” which the Court has construed as requiring “an electrically conductive portion that is threaded.” (Dkt.95,p.6.) Fuma asserts that the Solo’s “trapezoidal features” are threads. However, as noted above, because the trapezoidal features are located on the ***non-electrically conductive*** cartridge base and power unit connector, the Solo lacks the claimed ***electrically conductive*** threaded portion. Moreover, as explained in Reynolds’s Opening Brief (Dkt.122,pp.35-37), no reasonable juror could find that the trapezoidal features are “threaded,” providing an additional basis for non-infringement.

Fuma’s Opposition does not directly challenge Reynolds’s evidence that mechanically coupling complimentary threaded portions of the cartridge and power source, as required by the ’604 patent, require a constant pitch. Instead, Fuma irrelevantly argues that threads with variable pitches are well known (Dkt.130,p.15), pointing to screws that embed into wood or other ***non-threaded*** composite board. These examples, however, are inapplicable because only one engaging component is threaded. Fuma’s expert does not provide examples of variable pitch threads engaging with other ***threaded*** components. Nor could he because, as Reynolds’s expert explained, a threaded connection (e.g., a nut and bolt) ***requires*** that the connecting threads have a constant pitch. (Ex.122-8,¶¶48-50.) Reynolds’s evidence stands unrebutted on this point. In fact, Fuma’s expert agrees with Reynolds’s expert that a thread “is a helical ridge formed on a cylindrical core.” (Dkt.130,p.15.) Fuma ignores the “helical” aspect of that definition, namely that the shape must form a helix or spiral, like a corkscrew. The Solo’s trapezoidal features are clearly not a helix.

Instead, Fuma resorts to mischaracterizing Reynolds’s engineering drawing as demonstrating a constant pitch – it does not. Fuma advises the Court that the annotated drawing (annotated below) shows that the slope ***on one side*** of the trapezoidal feature has a 35° pitch (red), but does not advise the Court that the other slope on the opposite side has a 70° pitch (blue), and these two slopes are

connected by a changing-pitch base (green). In other words, the drawing shows multiple slopes of *varying pitch* – not a constant pitch as Fuma argues.



Fuma has presented *no evidence* from which a reasonable jury could conclude that the trapezoidal features on the cartridge base and power source connector are threaded, and the Court should grant Reynold's motion of no literal infringement.

Turning to its DOE arguments, Fuma cannot overcome the presumption of estoppel. As *Bio-Rad* explains, the tangential inquiry is “case-specific” and focuses on “the patentee’s objectively apparent reason for the narrowing amendment.” 967 F.3d 1353, 1365-66 (Fed. Cir. 2020) (internal quotation

omitted). The objective reason for the narrowing “threaded” amendment (which Fuma ignores) is found in the remarks accompanying the amendment: “none of the applied art shows a cartridge [] that is ***threadably coupled*** to a power source” or “discloses or suggests any apparent reason to use a ***threaded coupling*** . . . [or] electrically conductive ***threaded*** portions.” (Dkt.122-5,pp.64-65(emphasis added).)⁴ The unambiguous rationale for the amendment was to distinguish over ***non-threaded*** prior art devices, and thus the amendment is not tangential to the accused trapezoidal features which are also ***not threaded***.⁵

Fuma’s “foreseeability” argument is similarly based on an incorrect representation of the facts and law.⁶ (See Dkt.130,p.19.) First, Fuma is wrong in arguing that foreseeability is evaluated at the time the application was filed. Foreseeability is evaluated ***at the time of the amendment***. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, n.2 (Fed. Cir. 2003). Second, Fuma is factually wrong that the accused connection was not foreseeable. The Solo was

⁴ Fuma repeated this argument in subsequent responses (Dkt.122-6,pp.45,47-48), challenging the Examiner’s contention that the claimed threaded connection was “notoriously well known” and obvious, which the Court also recognized. (Dkt.92,p.4.)

⁵ This case stands in stark contrast to *Bio-Rad*, where the accused equivalent contained negligible, ***non-reactive*** amounts of fluorine and was thus tangential to the narrowing “non-fluorinated” amendment which was intended to distinguish over the prior art microchannels that contained ***reactive*** amounts of fluorine.

⁶ Foreseeability is a very rare exception. Fuma cites no precedent applying this exception, and Reynolds has not located any Federal Circuit authority applying it.

on sale by at least March 2013 (Exs.10-11), almost *a year before* Fuma amended its claims to require “electrically conductive threaded portions.” (Dkt.122-5,pp.52-66; Ex.9.) In fact, the QuickConnect feature, with its “unique & easy” press fit connection was featured in the 2013 Solo marketing. (Ex.12.) It also was the subject of a Reynolds patent application (Ex. 13) that published over two years before the ’604 patent issued. Fuma had ample opportunity to seek claims encompassing the publicly disclosed, allegedly equivalent non-threaded connection found in the Solo. These undisputed facts belie Fuma’s attorney argument that the accused connection was unforeseeable.

Finally, even if the claims were entitled to some scope of equivalence, Fuma lacks evidence of equivalence. Fuma’s expert merely speculates that it was Reynolds’s intent to “swap” the QuickConnect features, including the annular recess, protrusions and trapezoidal features, for threads. Fuma’s DOE analysis lacks the particularity necessary to raise a genuine issue for trial. *Motionless Keyboard Co. v. Microsoft Corp.*, 486 F.3d 1376, 1382-83 (Fed. Cir. 2007) (“patentee must present ‘particularized evidence and linking argument as to the insubstantiality of the differences between the claimed invention and the accused device, or with respect to the function, way, result test.’” (internal quotations omitted)). Fuma’s expert does not dispute that the annular recess and protrusions mechanically couple the cartridge and power source through a press-fit or “snap”

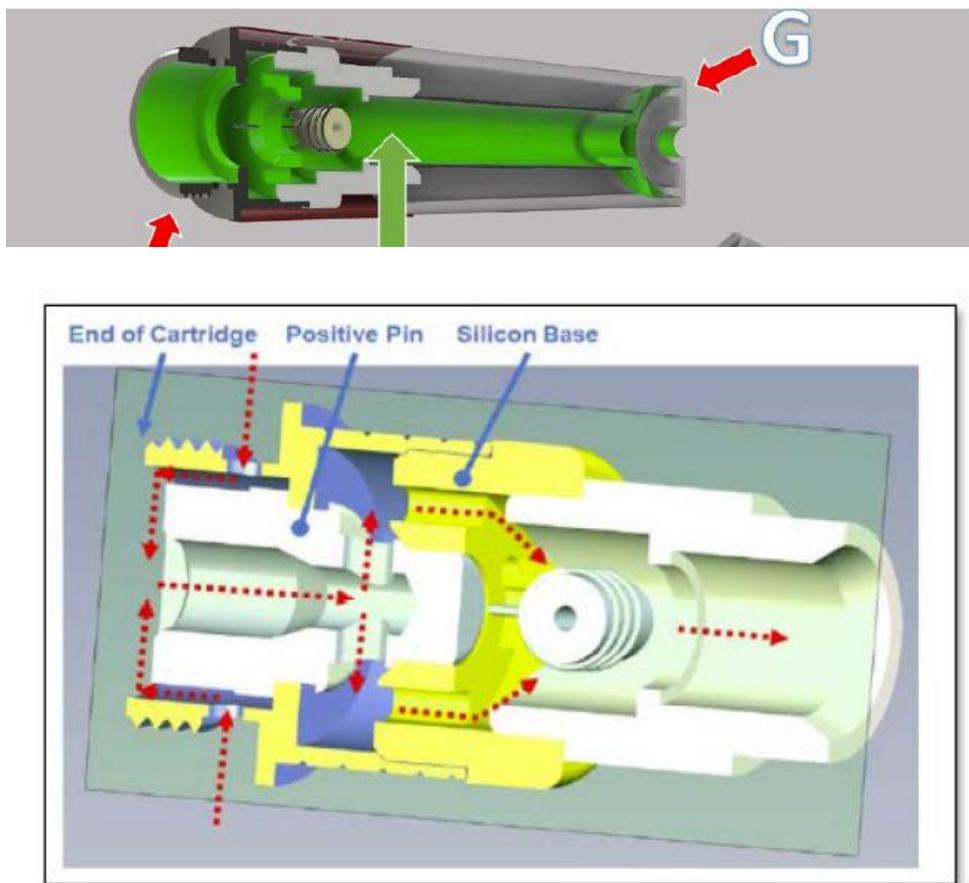
connection. Fuma’s expert also acknowledges that the trapezoidal features are designed to align the cartridge and power source and that they prevent rotation *after engagement*. What he fails to provide is any analysis of how these trapezoidal features operate in substantially the same function-way-result *as threads*, which operate by continually rotating the components along an axis, to achieve a mechanical connection. In contrast, Reynolds’s expert’s detailed analysis is *unrebutted* and shows that the trapezoidal features are structurally different and operate in a substantially different way to achieve a different result. (Dkt.122,p.42; Dkt.122-8,¶¶55-65.) Given the lack of disputed facts, this Court should find no infringement under DOE.

IV. Ciro Does Not Have the “Airflow Passageway”

Fuma acknowledges that the “airflow passageway” is a “structural limitation” (Dkt.130,p.22), yet Fuma’s infringement position (top figure below) inaccurately depicts the CIRO device⁷ and *ignores* the positive pin and silicone base – structures that, when properly illustrated (bottom figure below), *define multiple zig-zag segments* of the airflow passageway that preclude the Ciro from

⁷ As explained in Reynolds’s Opposition to Fuma’s summary judgment motion, the green highlighted area in Fuma’s annotated figures mischaracterize the Ciro’s airflow passageway. (Dkt.131,pp.47-48.)

having the claimed airflow passageway that extends in a “straight path through the center of the cartridge.”

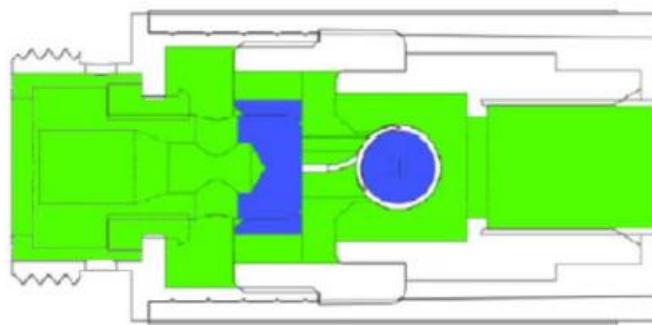


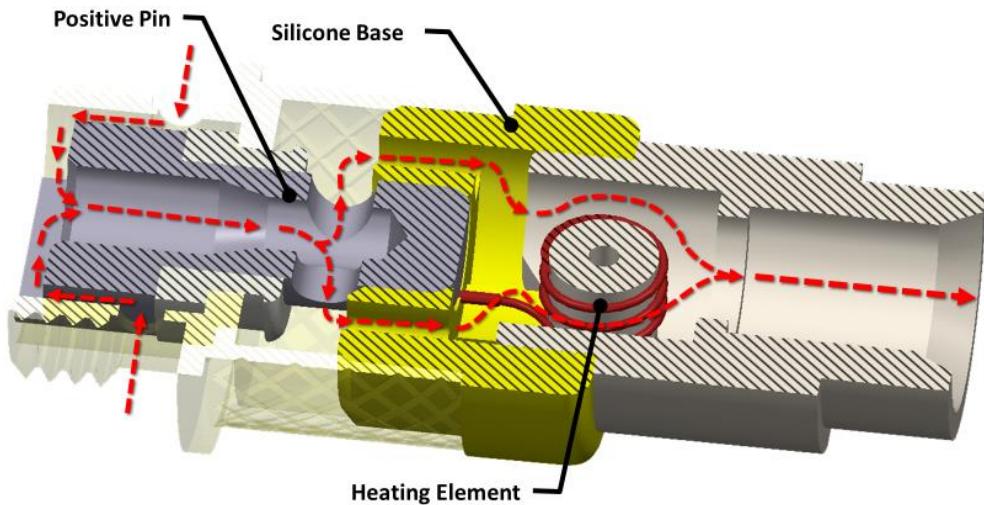
(top: Dkt.130,p.21; bottom: Dkt.131,pp.42-43.)

Fuma’s patents and the Ciro’s undisputed structure also belie Fuma’s argument that the positive pin is merely an obstacle in an otherwise straight airflow passageway. (Dkt.130,p.23.) The positive pin (and the silicone base) – like the center post 218 and the solution holding medium 204 of the Fig.2 embodiment – are structures that define segments of the airflow passageway ***through which air***

flows. The Ciro's non-infringement is mandated by the plain claim language and does not read out the patents' distinctly different preferred embodiment.

Relatedly, another Fuma annotated figure (top figure below) also inaccurately portrays the Ciro device and obscures the zig-zag airflow passageways formed through the positive pin and silicone base, this time creating the misimpression that air flows along a green highlighted path and that the "blue rectangular" portion of the positive pin (like the blue annotated heating element) is an obstacle in an otherwise straight airflow passageway. The green "passageway" is illusory because it indisputably includes areas through which air does not flow through the Ciro device. The undisputed facts confirm that air flows only along the path noted by the dotted red line (shown in the bottom figure below) and that path does not extend straight through the center of the cartridge. Instead it extends through zig-zag passageways formed by the various components including the positive pin and the silicon base.





(top: Dkt.130,p.28; bottom: Dkt.131,pp.39-40.) And, in contrast to the heating element (which sits *inside* the airflow passageway), the blue-annotated end of the positive pin (top figure) is *outside* the airflow passageways that zig-zag around it (bottom figure).

Attempting to salvage its infringement argument, Fuma relies on a previously undisclosed and inaccurate Fig.2 animation that ignores the central and axially extending airflow passageway 214 through gap 228 that the *patents themselves acknowledge*. (Dkt.130,pp.24-26.) The airflow path in Fuma's lawyer-inspired animation is contradicted by Fuma's expert who, in his Expert Reply Report, depicted the airflow passageway as a straight path through the cartridge, including through gap 228. (Dkt.120-7,¶61.) As the Court previously noted with respect to Fig.2, "the airflow passageway is depicted by dashed lines extending through the 'gap' [228] to the second aperture." (Dkt.95,pp.21-21).

Fuma's animation also inaccurately illustrates airflow in gap 228. The user's suctional force would pull vapor *from* gap 228 *into* the airflow passageway 214 toward the mouthpiece opening, *not* radially away from passageway 214 into gap 228 (as erroneously illustrated in Fuma's animation). Most notably, Fuma's inaccurate Fig. 2 animation (even if accepted) does not undermine the Court's construction. The Court's construction does not preclude air from flowing around obstacles *within* the claimed airflow passageway, nor does it preclude *additional* airflow passageways in gap 228 (or elsewhere in the device), provided there is a passageway that extends in a straight path through the center of the cartridge from first and second apertures.

But, the *airflow passageway* as *claimed*, as construed by the Court, and as illustrated by the dashed lines in Fig.2 is distinctly different from the Ciro's airflow passageway, which includes zig-zag segments that are neither straight nor located along the cartridge's central axis. As the Court stated (which Fuma ignores), “[n]othing in the specification or the claim language indicates that the passageway can be crooked, zig-zag, or anything other than generally straight.” (Dkt.95,p.19.)

The multiple non-axial zig-zag segments of the Ciro airflow passageway establish non-infringement as a matter of law.⁸

Turning to Fuma’s DOE argument, Fuma fails to demonstrate that the tangential exception applies. Although Fuma acknowledges the “airflow passageway” amendment was intended to distinguish over Thorens’s lack of an airflow passageway surrounded by a solution holding medium and which did not extend the entire length of the cartridge, Fuma ignores another structural feature added by the “airflow passageway” that Fuma relied upon to distinguish over Thorens. Fuma argued that Thorens lacked an airflow passageway that, as claimed, extends *centrally and axially* from first and second apertures of the cartridge. (Dkt.122-5,pp.32-33;Dkt.122-6,pp.44-45; Dkt.122-8,¶¶108-119.) Thus, the “airflow passageway” amendment distinguished Thorens on multiple, separate grounds, negating Fuma’s reliance on the tangential exception *and* creating multiple argument-based estoppels. *See Amgen Inc. v. Coherus BioSciences Inc.*, 931 F.3d 1154, 1159-60 (Fed. Cir. 2019); *Pharma Tech Solutions, Inc. v. LifeScan, Inc.*, 942 F.3d 1372, 1380-81) (Fed. Cir. 2019).

⁸ Fuma’s assertion that Reynolds’s description of the radial and peripheral passageways formed by the positive pin and silicone base is a “fatal” admission is perplexing and wrong; those passageways demonstrate non-infringement.

Fuma also irrelevantly asserts that it did not disclaim “distinct airflow paths within the airflow passageway.” Regardless, Fuma disclaimed devices that – like the Ciro – lack the claimed airflow passageway that extends **centrally and axially** (i.e., in a straight path through the cartridge center) from one aperture to the other.

Finally, even if not estopped, Fuma cannot use the DOE to recapture subject matter that it surrendered through deliberate claim drafting decisions. Fuma’s proposed equivalent converts a straight passageway that extends axially and centrally the length of the cartridge to multiple, multi-directional passageways, none of which (alone or combined) extend centrally and axially through the length of the cartridge (Dkt.122-8, ¶106) – a markedly different configuration that vitiates the “airflow passageway” limitation and which no reasonable juror could find is equivalent to the claimed configuration. *See Planet Bingo*, 472 F.3d at 1344 (granting summary judgment of non-infringement finding “after” is not equivalent to “before”).⁹

⁹ Notwithstanding Fuma’s incorrect assertion, Dr. Collins points to the undisputed geometry of the silicone base (which directs airflow at the wick from two different directions) in support of his opinion that the Ciro’s airflow passageway provides benefits not found in the claimed passageway. (Dkt.122-8, ¶95.) It is Dr. Vallee who speculates that the design of the Ciro’s airflow passageway was allegedly prompted by “ease of hand assembly.” (Dkt.120-7, ¶70.)

V. Conclusion

For the reasons stated herein, Reynolds's motion for summary judgment should be granted.

Dated: November 25, 2020

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of **REYNOLDS'S REPLY IN SUPPORT OF ITS MOTION FOR SUMMARY JUDGMENT OF NON- INFRINGEMENT** through the Court's CM/ECF system on November 25, 2020. Any other counsel of record will be served by First Class U.S. mail on this same date.

Dated: November 25, 2020

/s/ John F. Morrow, Jr.

John F. Morrow, Jr.

CERTIFICATE OF COMPLIANCE

The undersigned certifies that this brief complies with the word count limitation of Local Rule 7.3(d).

Dated: November 25, 2020

/s/ John F. Morrow, Jr.

John F. Morrow, Jr.